

DIXON LAKE
Marshall County
2010 Fish Management Report

Tom Bacula, Naturalist Aide
Jeremy Price, Fisheries Biologist



Fisheries Section
Indiana Department of Natural Resources
Division of Fish and Wildlife
I.G.C.-South, Room W273
402 W. Washington Street
Indianapolis, IN 46204

2010

EXECUTIVE SUMMARY

- Dixon Lake is a 33-acre natural lake located southwest of Plymouth in Marshall County, Indiana. Dixon Lake has a maximum depth of 32 ft and a mean depth of 14.6 ft. The state-owned public access site on the lake's southeast shoreline provides a concrete boat ramp and good shoreline fishing opportunities.
- A standard fisheries survey was conducted from May 26-27, 2010. Fish were collected using three sampling gears at standard locations: pulsed DC, shoreline night electrofishing for 30 min at two 15 min transects, two standard gill nets, and two trap nets were fished overnight.
- A total of 402 fish representing 16 species and one hybrid were collected for an estimated total weight of 164.7 lbs. The most abundant species by number were bluegills (38.8%), gizzard shad (29.1%), and largemouth bass (7.0%). By weight the most abundant species were gizzard shad (26.0%), bluegill (15.1%), and largemouth bass (13.8%).
- Bluegills were the most abundant species collected by number (156 fish) and second by weight (24.8 lbs). Bluegills TL ranged from 1.9 to 8.3 in and 44% of collected fish were considered harvestable ($TL \geq 6.0$ in). Bluegill PSD was 34. Bluegills were assigned ages 2 through 8, however individuals between 1.0 and 1.5 in were not aged.
- There were 117 gizzard shad collected that weighed an estimated 42.8 lbs. Shad ranged in length from 9.0 to 12.0 in.
- Largemouth bass were the third most abundant species collected by number (28 fish) and weight (22.7 lbs). Bass TL ranged from 2.8 to 18.4 in, but only two legal fish were collected ($TL \geq 14.0$ in). Bass PSD was 71. Bass ages ranged from 1 to 7 and 43% were age-2 individuals.
- Other catches include collecting 15 warmouth the largest individual was 8.8 in. Nine black crappie were collected and 78% of fish were larger than 7.0 in. Yellow perch up to 10.1 in were collected. Only six redear sunfish were collected, but they ranged from 7.5 to 8.7 in.
- The aquatic vegetation survey was conducted on July 19, 2010 and only two species of submersed vegetation were identified at 30 sampling locations. Coontail frequency of occurrence was 56.7% and Eurasian watermilfoil was 43.3%. Filamentous algae frequency of occurrence was 73.3%. The maximum depth plants were found was 14.5 ft. Other vegetation identified included: spatterdock, white water lily, buttonbush, purple loosestrife, cattail, and water willow.
- Overall, the standard survey of Dixon Lake indicated that no additional fish management actions are needed at this time.

TABLE OF CONTENTS

	Page
EXECUTIVE SUMMARY	i
TABLE OF CONTENTS.....	ii
LIST OF TABLES	iii
INTRODUCTION	1
METHODS	1
RESULTS	2
DISCUSSION	3
RECOMMENDATIONS	4
LITERATURE CITED	4
APPENDIX I	6

LIST OF TABLES

	Page
Table 1. Relative abundance of species by number (num.) and weight(wt.; lbs.; estimated from weight-length regressions) and sampling effort collected during 1976, 1998, and 2010 standard fisheries surveys at Dixon Lake, Marshall County, Indiana. Blank spaces indicate species was not collected during corresponding survey.	5

INTRODUCTION

Dixon Lake is a 33-acre natural lake located southwest of Plymouth in Marshall County, Indiana. Dixon Lake has a maximum depth of 32 ft and a mean depth of 14.6 ft. Dixon Lake is connected to the Yellow River less than a quarter mile to the east. During high water periods, fish are free to move between the lake and river via extensive wetlands on the outlet. There is a public access site with parking and an ADA compliant boat ramp built in 1998 on the southeast shoreline. This site provides good shoreline fishing opportunities.

The initial fish management survey was conducted in 1976 (Robertson 1977). A total of 196 fish were collected representing 16 species in 1976 (Table 1). Bluegill, gizzard shad, and largemouth bass were the most abundant species collected by number. The most recent fisheries survey was conducted in August 1998 (Robertson 1999). There were 536 fish collected again representing 16 species (Table 1). Bluegill, gizzard shad, and largemouth continued to be the most abundant species by number.

The goal of the 2010 fisheries survey was to evaluate the fish community at Dixon Lake under work plan 300FW10D41621.

METHODS

A standard fisheries survey was conducted from May 26-27, 2010. Physical and chemical characteristics were collected in the deepest area of the lake according to the Division of Fish and Wildlife (DFW) sampling guidelines (Shipman et al. 2001). Aquatic vegetation was sampled on July 17, 2010 using the DFW Tier II Aquatic Vegetation Survey Protocol (IDNR 2007).

Fish were collected using three sampling gears at standard locations: pulsed DC, shoreline night electrofishing for 30 min at two 15 min transects, two standard gill nets, and two trap nets were fished overnight. All fish collected were measured to the nearest 0.1 in total length (TL). A length-weight regression was used to estimate the weight of all fish collected. Five scale samples were taken per half-inch group (X.0-X.4 for inch group and X.5-X.9 for half-inch group) from dominant sportfish for age and growth analysis. For largemouth bass, five scale (fish < 12.0 in TL) or fin ray (fish \geq 12.0 in TL) samples were taken per half-inch group for age and growth analysis. Catch per unit effort (CPUE) was calculated as catch divided by effort

for each sampling gear. Proportional stock density (PSD) was calculated for largemouth bass and bluegill captured for fish caught with electrofishing only (Anderson and Neumann 1996).

RESULTS

A total of 402 fish representing 16 species and one hybrid was collected with an estimated total weight of 164.7 lbs. The most abundant species by number were bluegill (38.8%), gizzard shad (29.1%), and largemouth bass (7.0%). By weight the most abundant species were gizzard shad (26.0%), bluegill (15.1%), and largemouth bass (13.8%).

Bluegill was the most abundant species collected by number (156 fish) and second by weight (24.8 lbs). Bluegill CPUE was 192.0/h for electrofishing, 30.0/lift for trap nets and no fish were caught in gill nets. Total length ranged from 1.9 to 8.3 in, and 44% of collected fish were considered harvestable ($TL \geq 6.0$ in). Bluegill PSD was 34. Bluegills were assigned ages 2 through 8, however individuals between 1.5 and 1.0 in were not aged.

There were 117 gizzard shad collected that weighed an estimated 42.8 lbs. Gizzard shad CPUE was highest for electrofishing was 206.0/h and 7.0/lift with gill nets. No shad were collected in trap nets. Shad ranged in length from 9.0 to 12.0 in.

Largemouth bass was the third most abundant species collected by number (28 fish) and weight (22.7 lbs). All bass were collected with electrofishing at a rate of 56.0/h. Bass TL ranged from 2.8 to 18.4 in, but only two legal fish were collected ($TL \geq 14.0$ in). Bass PSD was 71 and RSD-14 was 10. Bass ages ranged from 1 to 7 and 43% were age-2 individuals. On average bass reached legal size during their sixth year of life.

Other catches include collecting 15 warmouth, of which the largest individual was 8.8 in. Nine black crappie were collected and 78% of fish were larger than 7.0 in. Yellow perch up to 10.1 in were collected. Only six redear sunfish were collected, but they ranged from 7.5 to 8.7 in.

The aquatic vegetation survey was conducted on July 19, 2010 and only two species of submersed vegetation were identified at 30 sampling locations. Coontail frequency of occurrence was 56.7% and Eurasian watermilfoil was 43.3%. Filamentous algae frequency of occurrence was 73.3%. The maximum depth plants were found was 14.5 ft. Other vegetation identified included: spatterdock, white water lily, buttonbush, purple loosestrife, cattail, and water willow.

DISCUSSION

Overall, the fishery at Dixon Lake has experienced minimal changes since the previous surveys. The bluegill and largemouth bass populations are providing adequate opportunities for fishermen. There are other game fish in the lake in low abundance that can provide additional species to target.

Relative abundance of bluegill dropped from 57% in 1998 to 39% in 2010. However, the average size and percent harvestable has increased from previous surveys from 29% in 1976, 24% in 1998, up to 44% in 2010. Bluegill PSD was 34 and fell within the objective range from 20 to 60 for a balanced population (Anderson and Neumann 1996). Mean length at capture for bluegill, as calculated from an age-length key, was similar across the 1998 and 2010 surveys.

While relative abundance of largemouth bass has declined slightly since the last survey, electrofishing catch rates for stock and preferred-sized largemouth bass are nearly identical while the catch rate of quality-sized bass increased by 43%. PSD was 71, higher than the objective range of 40 to 70 for a balance population (Anderson and Neumann 1996) and of that observed in 1998 (PSD = 54; Robertson 1999). Bass growth measured as mean length at capture has declined substantially since 1998 with age-4 bass being 1.7 in shorter in 2010 than in 1998. Despite the slower growth, the size structure of the bass population has improved since the previous survey, likely due to the increased protection of bass under the 14 in minimum size limit imposed in 1998.

Gizzard shad relative abundance was higher in 2010 than the other surveys. Similar to other surveys they were second in overall relative abundance by number. All shad collected were between 9.0 and 12.0 in unlike other surveys that had broader size distributions. The shad population should be monitored during the next survey to determine if management actions need to be taken to control shad.

Warmouth increased in relative abundance from previous surveys with fish up to 8.8 in collected. There was an increase in total catch of yellow perch from one in 1976, none in 1998, to 9 in 2010, and perch up to 10.1 in were collected. Redear sunfish relative abundance has dropped slightly from 1998, but fish up to 8.7 in were collected.

White sucker, spotted gar, spotted sucker increased in relative abundance since past surveys. Bowfins have decreased from the fourth most abundant species collected and first by weight in the 1998 survey to collecting only 5 fish in 2010. Ten yellow bullheads were collected

in 2010, but none were captured previously. Changes to the non-game fish communities may be due to the connectivity to the Yellow River.

RECOMMENDATIONS

- No fish management actions are needed at this time.

LITERATURE CITED

Anderson, R. O. and R. M. Neumann. 1996. Length, weight, and associated structural indices. Pages 447-481 *in* B. R. Murphy and D. W. Willis, editors. Fisheries techniques, 2nd edition. American Fisheries Society, Bethesda, Maryland

IDNR. 2007. Tier II aquatic vegetation survey protocol. Indiana Department of Natural Resources. Division of Fish and Wildlife. Indianapolis, Indiana.

Robertson, R. N. 1977. 1976 Dixon Lake: Fish Management Report. Indiana Department of Natural Resources. Division of Fish and Wildlife. Indianapolis, Indiana.

Robertson, R. N. 1999. 1998 Dixon Lake: Fish Management Report. Indiana Department of Natural Resources. Division of Fish and Wildlife. Indianapolis, Indiana.

Shipman, S. T., E. Braun, D. Carnahan, L. Koza, B. Schoenung, D. Keller, D. Kittaka, and T. Stefanavage. 2001. Manual of fisheries survey methods. Indiana Department of Natural Resources. Division of Fish and Wildlife. Indianapolis, Indiana.

Submitted by: Tom Bacula, Naturalist Aide
Date: December 16, 2010

Approved by: Jeremy Price, Fisheries Biologist

Approved by: Stu Shipman, Fisheries Supervisor
Date: February 7, 2011

Table 1. Relative abundance of species by number (num.) and weight(wt.; lbs.; estimated from weight-length regressions) and sampling effort collected during 1976, 1998, and 2010 standard fisheries surveys at Dixon Lake, Marshall County, Indiana.

Species	2010		1998		1976	
	Num. (%)	wt. (%)	Num. (%)	wt. (%)	Num. (%)	wt. (%)
Bluegill	38.8	15.1	56.7	7.5	44.4	7.3
Gizzard shad	29.1	26.0	13.2	19.8	24.0	32.7
Largemouth bass	7.0	13.8	11.8	14.1	7.7	8.7
White sucker	4.5	12.9	1.3	2.4	2.0	3.4
Warmouth	3.7	1.6	1.3	0.4	1.0	0.2
Spotted gar	3.0	4.4	0.9	1.5	3.6	7.9
Yellow bullhead	2.5	4.1	-	-	-	-
Black crappie	2.2	1.7	1.5	1.1	3.1	1.9
Spotted sucker	2.2	4.9	0.7	1.9	3.1	7.4
Yellow perch	2.2	1.3	-	-	0.5	0.2
Redear sunfish	1.5	1.5	2.1	1.0	1.5	0.7
Bowfin	1.2	10.6	6.3	45.2	4.6	19.9
Brown bullhead	0.7	1.8	1.3	2.0	1.5	1.8
Green sunfish	0.5	*	-	-	-	-
Redfin pickerel	0.2	0.1	0.2	*	-	-
Golden shiner	0.2	*	-	-	0.5	*
Hybrid sunfish	0.2	0.2	-	-	-	-
Pumpkinseed sunfish	-	-	1.1	0.2	1.0	0.1
Black bullhead	-	-	1.1	1.9	-	-
Channel catfish	-	-	0.2	0.7	-	-
Lake chubsucker	-	-	0.2	0.2	-	-
Common carp	-	-	-	-	1.0	5.5
Northern pike	-	-	-	-	0.5	2.3
TOTAL	402 fish	164.61 lbs	536 fish	285.17 lbs	196 fish	126.45 lbs

Sampling Effort	2010	1998	1976
Electrofishing (h)	0.5 DC	1 DC	1 AC
Gill nets (lifts)	2	4	4
Trap nets (lifts)	2	8	-

* Equals less than 0.1% of sample weight

APPENDIX I

Results of Standard Fishery Survey

LAKE SURVEY REPORT

Type of Survey
<input type="checkbox"/> Initial Survey
<input checked="" type="checkbox"/> Re-Survey

Lake Name	County	Date of survey (Month, day, year)
Dixon Lake	Marshall	5/26-5/27/2010
Biologist's name	Date of approval (Month, day, year)	
Jeremy Price		

LOCATION		
Quadrangle Name	Range	Section
Plymouth	2E	7
Township Name	Nearest Town	
33N	Plymouth	

ACCESSIBILITY					
State owned public access site			Privately owned public access site		Other access site
Located at Southeast Corner					
Surface acres	Maximum depth	Average depth	Acre feet	Water level	Extreme fluctuations
33	32	14.6	480	768.61	2'
Location of benchmark					
None present					

INLETS		
Name	Location	Origin
Unnamed	West Side	Pretty Lake

OUTLETS														
Name	Location													
Unnamed	East side, drains to the Yellow River													
Water level control														
None present														
POOL	ELEVATION (Feet MSL)	ACRES												
TOP OF DAM														
TOP OF FLOOD CONTROL POOL														
TOP OF CONSERVATION POOL														
TOP OF MINIMUM POOL														
STREAMBED														
<table><tr><td><input type="checkbox"/></td><td>Bolder</td></tr><tr><td><input type="checkbox"/></td><td>Gravel</td></tr><tr><td><input type="checkbox"/></td><td>Sand</td></tr><tr><td><input checked="" type="checkbox"/></td><td>Muck</td></tr><tr><td><input type="checkbox"/></td><td>Clay</td></tr><tr><td><input type="checkbox"/></td><td>Marl</td></tr></table>			<input type="checkbox"/>	Bolder	<input type="checkbox"/>	Gravel	<input type="checkbox"/>	Sand	<input checked="" type="checkbox"/>	Muck	<input type="checkbox"/>	Clay	<input type="checkbox"/>	Marl
<input type="checkbox"/>	Bolder													
<input type="checkbox"/>	Gravel													
<input type="checkbox"/>	Sand													
<input checked="" type="checkbox"/>	Muck													
<input type="checkbox"/>	Clay													
<input type="checkbox"/>	Marl													

Watershed use
80% Marsh and Wooded; 10% Residential; 10% Public Access Site
Development of shoreline
The south shoreline was once a city beach. Most of the shore is undeveloped.
Previous surveys and investigations
Hydrographic Survey: 1964.
Fisheries Survey: 1976 and 1998.

SAMPLING EFFORT					
ELECTROFISHING	Day hours		Night hours		Total hours
			0.5		0.5
TRAP NETS	Number of traps		Number of Lifts		Total effort
			2		2
GILL NETS	Number of nets		Number of Lifts		Total effort
			2		2
ROTENONE	Gallons	ppm	Acre Feet Treated	SHORELINE SEINING	Number of 100 Foot Seine Hauls

PHYSICAL AND CHEMICAL CHARACTERISTICS					
Color			Turbidity		
Brown			4 Feet 0 Inches (SECCHI DISK)		
Alkalinity (ppm)*			pH		
Surface: 60 Bottom: 80			Surface: 9.5 Bottom: 8.0		
Conductivity: 490 microsiemens			TDS: 1243 Air temperature: 73.7 °F		
Water chemistry GPS coordinates:			N 41.32669 W -86.34517		

TEMPERATURE AND DISSOLVED OXYGEN (D.O.)								
DEPTH (FEET)	Degrees (°F)	D.O. (ppm)	DEPTH (FEET)	DEGREES (°F)	D.O. (ppm)	DEPTH (FEET)	DEGREES (°F)	D.O. (ppm)
SURFACE	77.9	15.1	36			72		
2	77.1	13.7	38			74		
4	74.0	12.8	40			76		
6	66.9	10.1	42			78		
8	64.3	7.3	44			80		
10	62.3	7.0	46			82		
12	60.4	5.7	48			84		
14	58.3	2.0	50			86		
16	54.9	1.5	52			88		
18	51.1	1.5	54			90		
20	47.7	1.5	56			92		
25	43.7	1.5	58			94		
30	42.3	1.5	60			96		
31	42.2	1.4	62			98		
			64			100		
			66					
			68					
			70					

COMMENTS

*ppm-parts per million

Occurrence and Abundance of Submersed Aquatic Plants - Overall

Lake: Dixon	Secchi(ft): 5.0	SE Mean species / site: 0.14
Date: 7/19/2010	Littoral sites with plants: 21	Mean natives / site: 0.57
Littoral Depth (ft): 14.5	Number of species: 2	SE Mean natives / site: 0.09
Littoral Sites: 30	Maximum species / site: 2	Species diversity: 0.49
Total Sites: 30	Mean species / site: 1.00	Native diversity: 0

Species	Frequency of Occurrence	Score Frequency				Dominance
		0	1	3	5	
Coontail	56.7	43.3	43.3	10.0	3.3	18.0
Eurasian Watermilfoil	43.3	56.7	26.7	6.7	10	19.3

Filamentous algae 73

Other species noted: Spatterdock, white water lily, buttonbush, purple loosestrife, cattail, water willow

SPECIES AND RELATIVE ABUNDANCE OF FISHES COLLECTED BY NUMBER AND WEIGHT					
*COMMON NAME OF FISH	NUMBER	PERCENT	LENGTH RANGE (inches)	WEIGHT** (pounds)	PERCENT
Bluegill	156	38.8	1.9 - 8.3	24.79	15.1
Gizzard Shad	117	29.1	9.2 - 12.4	42.83	26.0
Largemouth Bass	28	7.0	2.8 - 18.4	22.69	13.8
White Sucker	18	4.5	11.2 - 18.1	21.23	12.9
Warmouth	15	3.7	3.1 - 8.8	2.71	1.6
Spotted Gar	12	3.0	8.4 - 23.8	7.19	4.4
Yellow Bullhead	10	2.5	8.0 - 12.0	6.73	4.1
Black Crappie	9	2.2	4.6 - 10.7	2.85	1.7
Spotted Sucker	9	2.2	9.1 - 18.0	8.13	4.9
Yellow Perch	9	2.2	4.6 - 10.1	2.06	1.3
Redear Sunfish	6	1.5	7.5 - 8.7	2.45	1.5
Bowfin	5	1.2	19.8 - 26.9	17.50	10.6
Brown Bullhead	3	0.7	8.8 - 13.6	2.98	1.8
Green Sunfish	2	0.5	3.1 - 3.7	0.08	0.0
Golden Shiner	1	0.2	2.6	0.01	0.0
Hybrid Sunfish	1	0.2	7.6	0.28	0.2
Redfin Pickerel	1	0.2	9.4	0.16	0.1
Total (16) Species	402			164.67	

*Common names of fishes recognized by the American Fisheries Society.

**Estimated weights from weight-length regression.

NUMBER, PERCENTAGE, WEIGHT, AND AGE OF BLUEGILL									
TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH	TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH
1.0					19.0				
1.5	2	1.3	0.01	Not Aged	19.5				
2.0					20.0				
2.5	9	5.8	0.02	2	20.5				
3.0	21	13.5	0.03	2	21.0				
3.5	11	7.1	0.05	2	21.5				
4.0	2	1.3	0.07	2	22.0				
4.5	16	10.3	0.09	3	22.5				
5.0	10	6.4	0.12	3	23.0				
5.5	17	10.9	0.15	3	23.5				
6.0	11	7.1	0.19	4	24.0				
6.5	25	16.0	0.23	4, 5	24.5				
7.0	15	9.6	0.28	5	25.0				
7.5	11	7.1	0.34	5, 6	25.5				
8.0	6	3.8	0.40	7, 8	26.0				
8.5					TOTAL	156			
9.0									
9.5									
10.0									
10.5									
11.0									
11.5									
12.0									
12.5									
13.0									
13.5									
14.0									
14.5									
15.0									
15.5									
16.0									
16.5									
17.0									
17.5									
18.0									
18.5									

ELECTROFISHING CATCH	192.0 /h	GILL NET CATCH	0/lift	TRAP NET CATCH	30.0 /lift
----------------------	----------	----------------	--------	----------------	------------

NUMBER, PERCENTAGE, WEIGHT, AND AGE OF GIZZARD SHAD									
TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH	TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH
1.0					19.0				
1.5					19.5				
2.0					20.0				
2.5					20.5				
3.0					21.0				
3.5					21.5				
4.0					22.0				
4.5					22.5				
5.0					23.0				
5.5					23.5				
6.0					24.0				
6.5					24.5				
7.0					25.0				
7.5					25.5				
8.0					26.0				
8.5					TOTAL	117			
9.0	5	4.3	0.28						
9.5	42	35.9	0.33						
10.0	48	41.0	0.37						
10.5	19	16.2	0.43						
11.0	2	1.7	0.48						
11.5									
12.0	1	0.9	0.61						
12.5									
13.0									
13.5									
14.0									
14.5									
15.0									
15.5									
16.0									
16.5									
17.0									
17.5									
18.0									
18.5									

ELECTROFISHING CATCH	206.0 /h	GILL NET CATCH	7.0 /lift	TRAP NET CATCH	0 /lift
----------------------	----------	----------------	-----------	----------------	---------

NUMBER, PERCENTAGE, WEIGHT, AND AGE OF LARGEMOUTH BASS									
TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH	TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH
1.0					19.0				
1.5					19.5				
2.0					20.0				
2.5	1	3.6	0.01	1	20.5				
3.0	1	3.6	0.02	1	21.0				
3.5	2	7.1	0.03	1	21.5				
4.0	1	3.6	0.04	1	22.0				
4.5	1	3.6	0.06	1	22.5				
5.0					23.0				
5.5					23.5				
6.0					24.0				
6.5					24.5				
7.0					25.0				
7.5	1	3.6	0.25	2	25.5				
8.0					26.0				
8.5					TOTAL	28			
9.0	1	3.6	0.42	3					
9.5	3	10.7	0.49	3					
10.0									
10.5									
11.0	2	7.1	0.74	4					
11.5									
12.0	3	10.7	0.95	3, 4, 5					
12.5	8	28.6	1.07	4					
13.0	1	3.6	1.20	4					
13.5	1	3.6	1.34	5					
14.0									
14.5									
15.0	1	3.6	1.81	6					
15.5									
16.0									
16.5									
17.0									
17.5									
18.0	1	3.6	3.07	7					
18.5									

ELECTROFISHING CATCH	56.0 /h	GILL NET CATCH	0 /lift	TRAP NET CATCH	0 /lift
----------------------	---------	----------------	---------	----------------	---------

AGE-LENGTH KEY FOR BLUEGILL														
LENGTH GROUP (inches)	NUMBER COLLECTED	NUMBER AGED	AGE											
			1	2	3	4	5	6	7	8	9	10	11	12
1.0														
1.5	2													
2.0														
2.5	9	5		9										
3.0	21	5		21										
3.5	11	5		11										
4.0	2	2		2										
4.5	16	5			16									
5.0	10	5			10									
5.5	17	5			17									
6.0	11	5				11								
6.5	25	5				5	20							
7.0	15	5					15							
7.5	11	5					4	7						
8.0	6	5							1	5				
8.5														
9.0														
9.5														
10.0														
Total	156	57		43	43	16	39	7	1	5				
Mean TL				3.3	5.3	6.4	7.1	7.8	8.3	8.3				
SE				0.06	0.07	0.06	0.05	0						

AGE-LENGTH KEY FOR LARGEMOUTH BASS														
LENGTH GROUP (inches)	NUMBER COLLECTED	NUMBER AGED	AGE											
			1	2	3	4	5	6	7	8	9	10	11	12
1.0														
1.5														
2.0														
2.5	1	1	1											
3.0	1	1	1											
3.5	2	2	2											
4.0	1	1	1											
4.5	1	1	1											
5.0														
5.5														
6.0														
6.5														
7.0														
7.5	1	1		1										
8.0														
8.5														
9.0	1	1			1									
9.5	3	3			3									
10.0														
10.5														
11.0	2	2				2								
11.5														
12.0	3	3			1	1	1							
12.5	8	5				8								
13.0	1	1				1								
13.5	1	1					1							
14.0														
14.5														
15.0	1	1						1						
15.5														
16.0														
16.5														
17.0														
17.5														
18.0	1	1							1					
18.5														
19.0														
19.5														
20.0														
Total	28	25	6	1	5	12	2	1	1					
Mean TL			3.8	7.8	10.2	12.5	13.0	15.3	18.3					
SE			0.29		0.53	0.18	0.75							

GILL NETS				TRAP NETS				ELECTROFISHING			
1	N 41.32738	W 86.34260		1	N 41.32841	W 86.34576		1	N 41.31709	W 86.34145	
	N 41.34344	W 86.34344		2	N 41.32562	W 86.34497			N 41.32856	W 86.34520	
2	N 41.32814	W 86.34569						2	N 41.32624	W 86.34708	
	N 41.32766	W 86.34629							N 41.34186	W 86.34186	